



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,419	12/19/2000	Andre C. Seznec	1662-25000JMH (POO-3078)	9553
22879	7590	06/27/2006	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			PAN, DANIEL H	
			ART UNIT	PAPER NUMBER
			2183	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/740,419

Applicant(s)

SEZNEC ET AL.

Examiner

Daniel Pan

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-4,6,11-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 5,7-10,16,18-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

1. Claims 1-23 remain for examination. No change has been made into the claims.
2. Claims 1-4, 6, 11-15, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran (6,101,577) in view of Drako et al. (5,371,877).
3. The rejection is maintained and incorporated by reference the last office action on 01/18/06.
4. The response filed on 04/06/06 has been fully considered but it is not persuasive.
5. In the remarks, applicant argued in substance that :
 - a) no suggestion or motivation to modify or combine the references;
 - b) there is no objective evidence;
 - c) Tran and Drako are directed to solving different problems;
 - d) examiner is picking and choose;
 - e) no reasonable expectation of success;
 - f) each of the banks comprises a single ported memory.
6. As to a) above, Tran taught a cache configured to plurality of banks and accessible in pipelined fashion (see col.5, lines 51-56), Tran also taught increasing the size, will increase the access times (see col.2, lines 52-53). In other words, a smaller size of cache had less access time. A smaller size cache had less hardware.

Art Unit: 2183

Therefore, less hardware, such as a single port, for the corresponding cache banks was desirable. In doing so, provided a motivation.

6. As to b) see citations above.

7. As to c), Tran was directed to the problem of minimizing the cache size (see col.2, lines 52-53) and Drako was directed to the problem of the hardware of the two ported into single ported memory (see col.1, lines 33-35). Therefore, Tran and Drako were directed to the solution pertinent to the same problem, reduction of hardware overheads.

8. As to d) , there is no pick and choose because the advantages of using a single ported memory had been known (see page 4, Paragraph 7 of last office action on 01/18/02), such as one taught by Drako, to reduce the hardware unless applicant can show the claimed single ported memory is different kind of single ported memory.

9. As to e) , Not only Drako's fig.2 can be used in substitution , but also in addition to the cache of Tran in order to provide flexible use of the system resources. Drako taught AND gates, multiplexers, clock synchronizations. The AND gates, multiplexers, clock synchronizations were all recognizable by one of ordinary skill in the art.

Therefore, substitution of single ported memory of Drako into Tran was applicable and reasonable.

10. As to f) the fact that a memory is being called a bank, segment, or section, does not affect the substance of the memory unit unless applicant can show his bank is different from other memory units. Drako did have a single ported memory unit.

Whether that memory unit is being called bank, section, segment, etc. is irrelevant to

Art Unit: 2183

the fact that the memory is being single ported, which is the gist of the invention.

Therefore, the label of a memory does not affect the memory itself.

11. Claims 5,16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the bank identifier for the conditional branch that was different than the bank identifier for a conditional branch that was last used. Tran disclosed bank identifier (bank0-bank7), but it did not teach the determination of the difference of the bank identifier of the last used to access the prediction array.

12. Claims 7-9 , 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the details of the comparison of the two bits value with the last used bank number.

13. Claims 10, 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the pair of the 4-1 mux from the output of the single ported bank. Tran had a multiplexer (selector) , but it was neither a 4-1 mux nor a pair of 4-1 mux.

14. Claims 22,23 are allowable over the art of record. None of the prior art of record teaches the combined features of the generation of the index from the conditional instruction address, the selection of two bits from the index, the comparison of the two bits with previous bank number determined by the conditional branch previously used to access the prediction array, the use of the two bits as current bank number if the previous bank number differs, and the change of the bank number if the previous bank number is equal for a conditional branch to access the prediction array .

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 703 305 9696, or the new number 571 272 4172. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 703 305 9712, or the new number 571 272 4162. The fax phone number for the organization where this application or proceeding is assigned is 703 306 5404.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

21 Century Strategic Plan

DANIEL H. PAN
PRIMARY EXAMINER
GROUP

